
New Species of *Stachys* (Lamiaceae) from Mesoamerica

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ABSTRACT. Four new species of *Stachys* L. from Mesoamerica, *S. darcyana* A. Pool, *S. harleyana* A. Pool, *S. riparia* A. Pool, and *S. uniflora* A. Pool, are described and their relationships with allied species are discussed. The new species are similar to each other in having stems rooting only at the lower nodes and corollas of various shades of pink or purple with the corolla tubes of medium size, 3.8–8 mm long. *Stachys darcyana* (Costa Rica and Panama) and *S. harleyana* (Chiapas, Mexico) have relatively large upper corolla lips (2.5–5 mm long) and the stamens exerted from the corolla tube 2.1–3.5 mm; the verticillasters in *S. darcyana* are 8- to 12-flowered and in *S. harleyana* 4- to 8-flowered. *Stachys riparia* (Costa Rica) and *S. uniflora* (Costa Rica and Panama) have relatively small upper corolla lips (1.1–2.25 mm long) and the stamens exerted from the corolla tube 0.5–1.25 mm; the verticillasters in *S. riparia* are 6- to 12-flowered and in *S. uniflora* the flowers are solitary in the axils of the leaves.

RESUMEN. Se describen cuatro especies nuevas de *Stachys* L. de Mesoamérica, *S. darcyana* A. Pool, *S. harleyana* A. Pool, *S. riparia* A. Pool y *S. uniflora* A. Pool, y se discute sus relaciones con especies aliadas. Las especies nuevas son similares entre sí por tener tallos que enraízan sólo en los nudos inferiores y corolas de varias gamas de rosa o púrpúreo con los tubos corolinos de tamaño mediano, 3.8–8 mm de largo. *Stachys darcyana* (Costa Rica y Panamá) y *S. harleyana* (Chiapas, México) tienen los labios corolinos superiores relativamente largos, 2.5–5 mm de largo y los estambres exertos 2.1–3.5 mm del tubo corolino; los verticilastros en *S. darcyana* tienen de 8 a 12 flores y en *S. harleyana* de 4 a 8 flores. *Stachys riparia* (Costa Rica) y *S. uniflora* (Costa Rica y Panamá) tienen los labios superiores corolinos relativamente pequeños (1.1–2.25 mm de largo) y los estambres exertos 0.5–1.25 mm del tubo corolino; los verticilastros en *S. riparia* tienen de 6 a 12 flores y en *S. uniflora* las flores son solitarias en las axilas de las hojas.

Key words: IUCN Red List, Lamiaceae, Mesoamerica, *Stachys*.

Stachys L. is a subcosmopolitan genus in the Lamiaceae of approximately 275 species with primary

centers of diversity in the warm temperate regions of the Mediterranean and Southwest Asia, and with secondary centers in North America, South America, and southern Africa (Bhattacharjee, 1980). Epling (1934) provided a preliminary revision of the American species in which he recognized 27 species from Mexico and Central America, with seven species from the Mesoamerican region, *S. agraria* Schlechtendal & Chamisso, *S. coccinea* Ortega (as *S. coccinea* Jacquin, Turner 1994a), *S. costaricensis* Briquet, *S. guatemalensis* Epling, *S. lindenii* Benth., *S. nubilorum* Epling, and *S. pittieri* Briquet. In a subsequent paper (1944), Epling described two new Mesoamerican species, *S. calcicola* and *S. glechomoides*, and expanded the geographic range of two species, *S. eriantha* Benth. and *S. radicans* Epling, to Mesoamerica, and in 1966, in conjunction with Játiva, placed one of his Mesoamerican species, *S. guatemalensis*, in synonymy with *S. rotundifolia* Mocino & Sessé ex Benth. Recent Mesoamerican floristic treatments of *Stachys*, *Flora of Costa Rica* (Standley, 1938), *Flora of Panama* (Nowicke & Epling, 1969), and *Flora de Nicaragua* (Pool, 2001), have followed the species concepts of Epling (1934). In the *Flora of Guatemala*, Standley and Williams (1973) followed Epling (1934) with the addition of *S. calcicola*, but placed *S. glechomoides* in synonymy of *S. guatemalensis*, and did not include *S. eriantha* and *S. radicans*, cited in Epling (1944) as occurring in Guatemala.

Turner (1994b) published a synopsis of the Mexican and Central American species in which he recognized 38 species with 9 species from the Mesoamerica region, *Stachys agraria*, *S. calcicola*, *S. coccinea*, *S. lindenii*, *S. nubilorum*, *S. pilosissima* M. Martens & Galeotti, *S. pittieri*, *S. radicans*, and *S. rotundifolia*. His treatment of Mesoamerican species concurred with that of Epling (1934, 1944), excluding his treatment of *S. costaricensis*, *S. glechomoides*, and *S. guatemalensis*, all of which he placed in synonymy of *S. pilosissima*.

Pool (in an upcoming volume of *Flora Mesoamericana*) recognizes 12 species of *Stachys* for Mesoamerica, *Stachys agraria*, *S. calcicola*, *S. coccinea*, *S. costaricensis* (including *S. guatemalensis*), *S. lindenii*, *S. nubilorum* (including *S. glechomoides*), *S. pittieri*, and *S. rotundifolia*, in addition to the four new species published here. Two of the new species, *S. riparia* A.

Pool and *S. uniflora* A. Pool, have very short upper corolla lips and can be identified as *S. pittieri* using the keys of Epling (1934) and Turner (1994b). In the *Flora de Nicaragua*, Pool (2001) treated the unpublished species, *S. riparia* and *S. uniflora*, in discussion as *S. fendleri* Briquet. Numerous specimens of the new species *Stachys harleyana* A. Pool, which has narrowly oblong to elliptic-oblong leaves, have been identified as *S. radicans* by Epling and/or Turner, and the new species can be identified as this in their keys (Epling, 1934; Turner, 1994b), if habit is ignored. *Stachys darcyana* A. Pool could probably be identified as *S. pilosissima* following Turner (1994b), but with 8 to 12 flowers per node versus 4 to 6, or following Epling (1934) as *S. costaricensis*, again ignoring habit. A full key to the Mesoamerican species of *Stachys* will be published as part of the *Flora Mesoamericana* treatment (Pool, ined.).

The cyme is the basic unit of the inflorescence in the Lamiaceae. Often the peduncle of the cyme is greatly reduced resulting in a congested fascicle of flowers. An opposite pair of such cymose fascicles is referred to by most students of the Lamiaceae (Bentham, 1832–1836; Harley, 2004) and here, as a verticillaster. This is opposed to the use of this term in the *Flora of Panama* (Nowicke & Epling, 1969), in which the cyme is termed a verticillaster and the pair of cymes a verticil.

1. *Stachys darcyana* A. Pool, sp. nov. TYPE: Panama. Chiriquí: from center of town to top of Barú, 18 km from Boquete, *J. P. Folsom*, *W. D'Arcy* & *L. Skog* 2264 (holotype, MO). Figure 1.

Species nova *Stachydi sprucei* Briquet similis, sed ab ea foliorum lanceolorum apice acuminato et margine crenulato differt.

Perennial (?) herbs, over 0.6 m, lax, probably rooting only near base, pubescent, the indumentum glandular-capitate hairs, 0.05–0.25 mm, spreading, and eglandular hairs, coarse, 1–1.5 × 0.05 mm, tangled or spreading, and fine, 0.05–1.5 mm, tangled to spreading. Vegetative leaves 2.1–9.5 × 1.2–6.1 cm, lanceolate, adaxial surface with hairs 0.25–1 mm, abundant, abaxial surface with hairs 0.25–1 mm, abundant, the base cordate and shortly cuneate, the margins finely crenate, the apex acuminate; petioles 1–4.5 cm. Verticillasters 8- to 12-flowered, usually contiguous distally to form a thick, terminal spike-like inflorescence, proximally further spaced, the upper subtended by narrowly oblanceolate, basally broadly attenuate bracts; pedicels 0.75–2.25 mm; bracteoles 0.5–1.25 mm. Flowering calyces 5–7 mm, 3/4 to equaling length of corolla tube, pubescent with hairs 0.04–0.4 mm, the tube 2.75–4.5 × 1.5–2.25 mm, cylindric,

the teeth 2.25–3.25 mm, 2/5 to nearly 1/2 length of calyx, narrowly lanceolate, subcoriaceous, erect, apices acuminate with rigid spine-like tips; corollas pink-lavender to mauve, the tube 6–8 × 1.5–3 mm, 2/5 to slightly over 1/2 exserted from calyx tube, equaling to 1/4 exserted from total calyx, with annulus 1.75–3.25 mm above base, not saccate, the lower lip 4–7 mm, 2/3 to equaling length of corolla tube, middle lobe 1.5–3.5 mm, lateral lobes 1–1.5 mm, the upper lip 2.5–3.75 × 2.25–3.25 mm, 2/5 to 3/5 length of lower lip and forming 90°–180° angle with lower lip, obtuse and bifid; stamens exserted from corolla tube 2.2–3 mm; style exserted from tube 2–3.5 mm. Nutlets 1.6–1.75 × 1.4–1.5 mm, dark red-brown.

Distribution. *Stachys darcyana* is endemic to central Costa Rica and northern Panama, where it is found in high montane forests, between 3000 and 3300 m elevation.

Conservation status. At this time the conservation status of *Stachys darcyana* is estimated to be Endangered (EN B1 a) (IUCN, 2001), as the extent of occurrence is estimated to be less than 5000 km² and there are less than five known localities. A search for this species might result in its status being lowered.

Stachys darcyana is most similar vegetatively to *S. hebens* Epling (Colombia), which differs in having only four or six flowers per verticillaster, the verticillasters distant, corollas tubes saccate, and the upper corolla lips 3.75–5.5 mm long. *Stachys sprucei* Briquet (Ecuador) is similar to *S. darcyana* in its inflorescence and flowers, but has leaves that are oblong to broadly ovate, with broadly rounded apices, and margins broadly crenate. *Stachys darcyana* could probably be misidentified as *S. pilosissima* following Turner (1994b), but with more flowers per node, or following Epling (1934) as *S. costaricensis*, ignoring habit. *Stachys pilosissima* (Mexico) differs from *S. darcyana* in its rounded to bluntly acute leaf apices, verticillasters with only four to six flowers subtended by reduced floral leaves, and the corolla tubes 1/4 to 2/5 exserted from the calyx. *Stachys costaricensis* (Mexico to Panama) differs from *S. darcyana* by its 2- to 6-flowered verticillasters, saccate corolla tubes, and relatively longer upper corolla lips, which are 3/5 to slightly longer than the lower lips.

Paratypes. COSTA RICA. **San José-Cartago:** Cordillera de Talamanca, upper slopes, W ridge of Cerros Cuericí, 15 Sep. 1983, *G. Davidse* 24673 (MO). PANAMA. **Chiriquí:** La Nevera, below summit of El Barú, 14 Mar. 1979, *W. D'Arcy* & *B. Hammel* 12471 (K not seen, MO), *W. D'Arcy* & *B. Hammel* 12472 (K not seen, MO); S of Paso Respingo trail to high ridge N of Volcán Barú summit, 4 Apr. 1979, *B. Hammel*, *W. D'Arcy*, *E. C. Hill*, *S. Schwartz*, *O. & H. Wolcott* 6719 (MO).



Figure 1. *Stachys darciana* A. Pool. —A. Habit. —B. Inflorescence (J. P. Folsom, W. D'Arcy & L. Skog 2261 (MO), holotype).

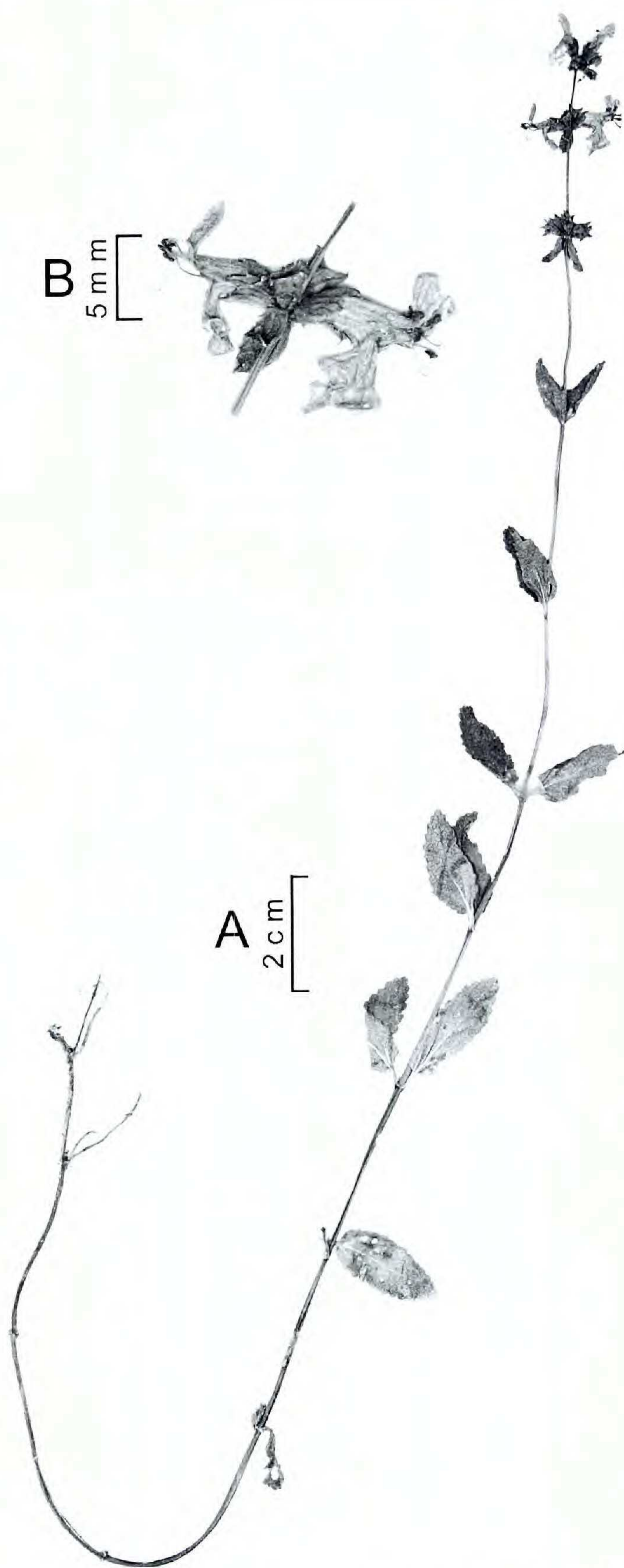


Figure 2. *Stachys harleyana* A. Pool. —A. Habit. —B. Verticillaster (D. E. Breedlove 51924 (CAS), isotype).

2. *Stachys harleyana* A. Pool, sp. nov. TYPE: Mexico. Chiapas: Mun. de San Cristóbal de las Casas, E edge of San Cristóbal de las Casas on slopes along Río Amarillo, 2195 m, 4 Aug. 1981, D. E. Breedlove 51924 (holotype, MO; isotypes, CAS, MEXU). Figure 2.

Species nova *Stachydi radicans* Epling similis, sed ab ea caulibus glabriusculis e nodis infimis tantum radicantibus,

verticillastrorum bracteis (e foliis caulinis discrepantibus) subtentis atque calycis dentibus ad apicem attenuatis differt.

Perennial herbs, 0.2–0.5 m, decumbent and rooting only at lower nodes, upper nodes and inflorescence erect, nearly glabrous, the indumentum a mixture of glandular-capitate hairs, 0.05–0.15 mm, spreading, and eglandular hairs, 0.05–0.25 mm, spreading to tangled. Vegetative leaves 0.9–3.1 × 0.4–1.2 cm, narrowly oblong to elliptic-oblong, adaxial surface with hairs 0.05–0.5 mm, scattered, or glabrous, abaxial surface glabrous (rarely with hairs 0.05–0.1 mm), the base truncate or rounded, then decurrent along petiole, the margins serrulate, the apex rounded to bluntly acute; petioles 0.2–0.5 cm. Verticillasters 4- to 8-flowered, all well spaced, or closer distally, the upper subtended by narrowly elliptic, sessile, or basally broadly attenuate bracts; pedicels 0.25–1 mm; bracteoles 0.5–1 mm. Flowering calyces 4–4.75 mm, 7/10 to equaling length of corolla tube, pubescent with hairs 0.05–0.5 mm, the tube 2.25–2.75 × 1.5–2.25 mm, campanulate, the teeth 1.5–2.25 mm, ca. 2/5 to 1/2 length of calyx, lanceolate, membranaceous, erect to weakly curving and spreading, apices acuminate with pointed, often curved tips, if spine-like then fragile; corollas pink-purple, the tube 4–6 × 1.4–2.5 mm, 2/5 to 3/5 exserted from calyx tube, equaling to 3/10 exserted from total calyx, with annulus 1.5–3 mm above base, not or only slightly saccate above annulus, the lower lip 4.25–6 mm, 9/10 length of to slightly longer than corolla tube, middle lobe 1.6–3.5 mm, lateral lobes 0.6–1.75 mm, the upper lip 3.25–5 × 2–3.25 mm, 2/3 to equaling length of lower lip and forming 90° angle with lower lip, truncate and bifid; stamens exserted from corolla tube 2.1–3.5 mm; style exserted from tube 1–3 mm. Nutlets 1.75 × 1–1.25 mm, red-brown.

Distribution. *Stachys harleyana* is endemic to central Chiapas, where it is found in wet pastures or mixed forest with oak, between 2000 and 2200 m elevation.

Conservation status. At this time the conservation status of *Stachys harleyana* is estimated to be Endangered (EN B1 a) (IUCN, 2001), as the extent of occurrence is estimated to be less than 5000 km² and there are less than five known localities. A search for this species might result in its status being lowered.

Stachys harleyana is similar to *S. radicans* (central Mexico), which differs in habit, rooting from all but the most apical nodes, usually broader leaves (length less than or equal to two times width), pilose stems, pubescent abaxial leaf surfaces, closely condensed verticillasters subtended by floral leaves no different from the vegetative leaves, and deltoid and apically

obtuse to acute calyx teeth. The flowers of *S. harleyana* are very similar to those of *S. costaricensis*. The latter differs in habit, usually rooting from numerous nodes (vs. only the lower), leaves broader and cordate with longer petioles, and the leaves and stems much more densely pubescent than those of *S. harleyana*. This species is named in honor of R. M. Harley, who first annotated *Brenan et al. 14423* (K, MEXU) as perhaps representing a new species.

Paratypes. MEXICO, 1864–1870, *Ghiesbreght 744* (MO). **Chiapas:** San Cristóbal de las Casas, in wet pasture betw. town & Hotel Molino de Alborada, 28 Oct. 1977, *J. P. M. Brenan, E. W. & M. Greenwood 14423* (K, MEXU); along Tuxtla Gutiérrez–Comitán hwy. (Mexico 190), ca. 1 mi. (1.5 km) E of San Cristóbal de las Casas, 12 July 1974, *R. Sanders 74126* (K, MEXU, NY); cult. at Univ. of Michigan, Matthaei Botanical Gardens from *R. Sanders 74126*, *R. Sanders s.n.* (NY); N end San Cristóbal de las Casas, 6 July 1964, *D. E. Breedlove 6024* (DS at CAS); San Cristóbal de las Casas, Cerro San Cristóbal, 18 Aug. 1965, *D. E. Breedlove 11898* (DS at CAS, F); Mun. of Zinacantán, valley floor of Zinacantán Center, 13 Apr. 1966, *R. M. Laughlin 665* (DS at CAS, MEXU), 27 May 1966, *R. M. Laughlin 986* (DS at CAS, US); Mun. of Tenejapa, slopes W Tenejapa Center along trail to Paraíso, 5 Aug. 1964, *D. E. Breedlove 6871* (DS at CAS, F); Mun. of Tenejapa, steep moist slope of sumidero in Tenejapa Center, 11 July 1965, *D. E. Breedlove 10744* (DS at CAS); Mun. of Tenejapa, slope along trail from Tenejapa Center to Colonia San Antonio, 12 July 1965, *D. E. Breedlove 10787* (DS at CAS, MEXU).

3. *Stachys riparia* A. Pool, sp. nov. TYPE: Costa Rica, Limón: Cordillera de Talamanca, Cantón de Talamanca, along side of Río Lori (tributary of Río Coen), just upstream from mouth of Quebrada Kuisa, 9°21'30"N, 83°13'30"W, 1810 m, 19 Mar. 1993, *M. Grayum 10364* (holotype, MO; isotype, INB not seen). Figure 3B.

Species nova *Stachydi pittieri* Briquet similis, sed ab ea calycibus minoribus, calyce longitudine corollae tubi 3/5–2/3 partes aequanti, calycis dentibus obtusis in acumene debile desinenti atque verticillastris 6- a 12-floris differt.

Perennial herbs, ca. 0.5 m, decumbent and rooting only at lower nodes, pubescent, the indumentum a mixture of glandular-capitate hairs, 0.05–0.6 mm, tangled to spreading, and eglandular hairs, coarse, 0.75–2.5 × 0.05 mm, spreading to tangled, and fine, 0.05–0.5 mm, spreading to tangled. Vegetative leaves 2.6–3.1 × 1.6–2.1 cm, lanceolate, adaxial surface with hairs 0.3–2 mm, abundant, abaxial surface with hairs 0.5–2 mm, abundant, the base cordate and shortly cuneate to subtruncate, the margins crenate, the apex acute or blunt acute; petioles 0.6–2 cm. Verticillasters 6- to 12-flowered, well spaced, the upper subtended by reduced, petiolate floral leaves; pedicels 1.5–1.75 mm; bracteoles 0.5–1 mm. Flowering calyces 2.6–3.1 mm, 3/5 to 2/3 length of corolla

tube, nearly glabrous with few hairs 0.25–1 mm, the tube 1.76–2.25 × 1.25 mm, narrowly obconic with swollen base, the teeth 0.75–0.9 mm, less than 1/3 length of calyx, deltoid, membranaceous, erect, apices obtuse with weak, minute acumen; corollas magenta-pink, the tube 3.8–5.2 × 1–1.25 mm, 1/2 to 3/5 exserted from calyx tube, 1/3 to 2/5 exserted from total calyx, with annulus 1.5–2.6 mm above base, not saccate, the lower lip 2.25–3.8 mm, 1/2 to 3/4 length of corolla tube, middle lobe 0.8–1.8 mm, lateral lobes 0.5–0.6 mm, the upper lip 1.1–1.5 × 1.4–1.5 mm, 2/5 to 7/10 length of lower lip and forming 45° angle with lower lip, obtuse to slightly bifid; stamens exserted from corolla tube 0.75–1 mm; style exserted from tube 0.5–1.5 mm. Nutlets 1.3 × 1.1 mm, brown.

Distribution. *Stachys riparia* is endemic to the Cordillera de Talamanca in Costa Rica, where it is found along rivers, between 1400 and 1810 m elevation.

Conservation status. At this time the conservation status of *Stachys riparia* is estimated to be Endangered (EN B1 a) (IUCN, 2001), as the extent of occurrence is estimated to be less than 5000 km² and there are less than five known localities. A search for this species might result in its status being lowered. Conversely, a broad definition of location might raise the status to Critically Endangered (CR B1a), as the extent of occurrence is estimated to be less than 100 km².

The flowers of *Stachys riparia* are similar to those of *S. uniflora* (described below), *S. pittieri*, and *S. fendleri* in having corollas with a relatively small upper lip and the stamens only slightly exserted from the corolla tube. *Stachys pittieri* differs from *S. riparia* in having verticillasters with only four or six flowers and flowers with larger, densely pubescent calyces, with the teeth lanceolate and apically acute or acuminate with rigid spine-like tips. *Stachys fendleri* (Venezuela) differs from *S. riparia* in its longer calyces (3.5–5.75 mm), which are 3/4 the length to 1/3 longer than the corolla tubes and have teeth with rigid, spine-like tips.

Paratypes. COSTA RICA, **Limón:** Cordillera de Talamanca, Cantón de Talamanca, P.N. Cordillera de Talamanca, frente unión Quebrada Kirigú con Río Coen, entre Ujarrás y San José Cabecar, 28 Mar. 1993, *G. Herrera 6067* (INB not seen, MO); Cordillera de Talamanca, Cantón de Talamanca, P.N. Cordillera de Talamanca, fila arriba unión de Ríos Lori y Coen, entre Ujarrás y San José Cabecar, 29 Mar. 1993, *A. Fernández & W. Gamboa 919* (INB not seen, MO).

4. *Stachys uniflora* A. Pool, sp. nov. TYPE: Costa Rica, Puntarenas: Cantón de Coto Brus, Las Mellizas, cerro La Neblina, cabecera de Río

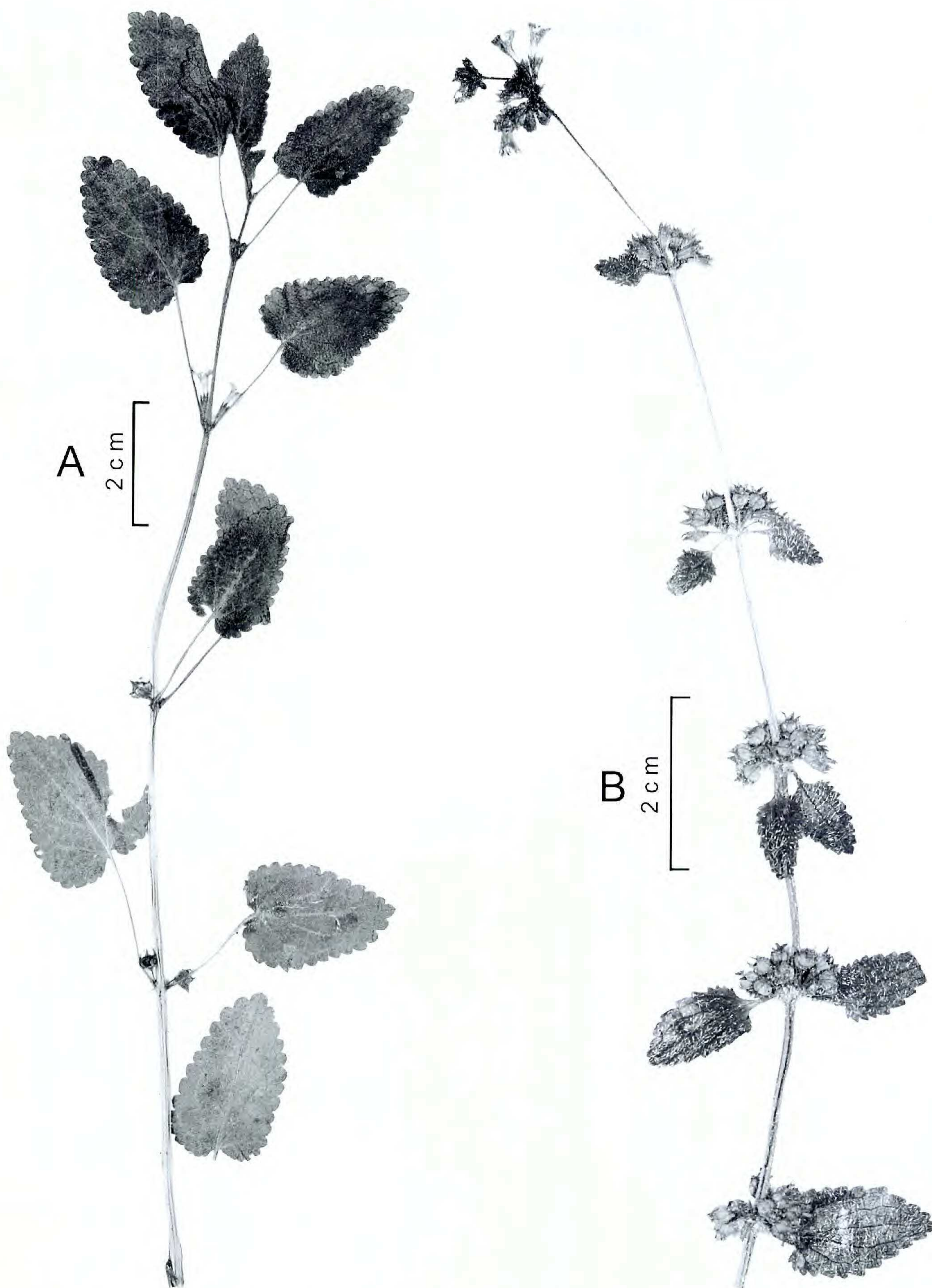


Figure 3. —A. *Stachys uniflora* A. Pool, habit (A. Chacón 336 (MO), holotype). —B. *Stachys riparia* A. Pool, habit (G. Herrera 6067 (MO), paratype).

Negro, alrededor de la laguna, 8°55'30"N, 82°45'40"W, 1600 m, 16 Aug. 1989, A. Chacón 336 (holotype, MO; isotypes, CR not seen, INB not seen). Figure 3A.

Species nova *Stachydi pittieri* Briquet similis, sed ab ea floribus solitariis ad foliorum axillas, calyce longitudine corollae tubi 1/2–4/5 partes aequanti atque calycis dentibus in acumen debile desinenti differt.

Perennial herbs, 0.3–0.5 m, climbing, rooting only at lower nodes, pubescent, the indumentum a mixture of glandular-capitate hairs, 0.05–0.1 mm, spreading and eglandular hairs, coarse, 0.25–1 × 0.05 mm, tangled or spreading to retrorse, and fine, 0.05–0.1 mm, tangled or spreading to retrorse. Vegetative leaves 1–3.5 × 0.8–2.3 cm, ovate, adaxial surface with hairs 0.25–1 mm, abundant, abaxial surface with hairs 0.1–1 mm, abundant, the base cordate and shortly cuneate, the margins crenate, the apex acute or blunt acute; petioles 1–3.5 cm. Opposite cymes each reduced to 1 flower, the pairs of flowers widely spaced, all subtended by petiolate floral leaves not differing from vegetative leaves; pedicels 1.5–2 mm; bracteoles 0.75–1 mm. Flowering calyces 2.25–4.6 mm, 1/2 to 4/5 length of corolla tube, pubescent with hairs 0.5–0.75 mm, the tube 1.25–3.25 × 1–1.75 mm, narrowly obconic, the teeth 0.75–1.9 mm, 1/3 to 1/2 length of calyx, lanceolate, membranaceous, erect, apices acuminate with weak acumen; corollas pale pink, lilac-pink, or with tube white and lips pink, the tube 5–7 × 1.25–1.75 mm, 3/5 to 7/10 exerted from calyx tube, 1/5 to 1/2 exerted from total calyx, with annulus 1–2.5 mm above base, not saccate, the lower lip 3.25–4.25 mm, 1/2 to 3/4 length of corolla tube, middle lobe 2–3 mm, lateral lobes 0.75–1.25 mm, the upper lip 1.25–2.25 × 1.5–2 mm, 1/3 to 1/2 length of lower lip and forming 45°–90° angle with lower lip, rounded to slightly bifid; stamens exerted from corolla tube 0.5–1.25 mm; style exerted from tube 0.05–1.25 mm. Nutlets 2 × 1.76 mm, black.

Distribution. *Stachys uniflora* is endemic to southern Costa Rica and northern Panama, where it is found in disturbed areas, between 1600 and 2750 m elevation.

Conservation status. At this time the conservation status of *Stachys uniflora* is estimated to be Endangered (EN B1 a) (IUCN, 2001), as the extent of occurrence is estimated to be less than 5000 km² and there are less than five known localities. A search for this species might result in its status being lowered.

The flowers of *Stachys uniflora* are similar to those of *S. riparia*, *S. pittieri*, and *S. fendleri* in having a small upper corolla lip and the stamens only slightly exerted. *Stachys riparia* differs from *S. uniflora* in its 6- to 12-flowered verticillasters, which are subtended by reduced floral leaves, and relatively shorter, deltoid and apically obtuse calyx teeth. *Stachys pittieri* differs from *S. uniflora* in its 4- or 6-flowered verticillasters, which are subtended by reduced floral leaves, and flowers with the corolla tube included in to less than 1/5 exerted from the calyx and the calyx teeth with rigid, spine-like tips. *Stachys fendleri* differs from *S. uniflora* in its 6- or 8-flowered

verticillasters, which are subtended by reduced floral leaves, and calyces that are 3/4 the length to 1/3 longer than the corolla tubes and have teeth with rigid, spine-like tips.

Stachys rotundifolia (Mexico to Chiapas) is the only other Central American species of *Stachys* with the flowers solitary in the axils of floral leaves similar in size to the vegetative leaves. It differs from *S. uniflora* in its broadly ovate to nearly circular leaves, larger flowers (calyx 5.75–8 mm, corolla tube 8–16 mm, upper corolla lip 3.25–7 mm), and rigid, spine-like calyx tooth tips.

Paratypes. COSTA RICA. **Limón:** Cordillera de Talamanca, headwaters of W branch of Río Teribe, betw. Río Sini & cont. divide at Cerro Bekom, 21 & 27 Mar. 1984, G. Davidse, G. Herrera Ch. & R. H. Warner 26154 (MO). PANAMA. **Chiriquí:** pasture & “overgrown” area, Alto Respinga, 27 Sep. 1978, W. G. D’Arcy 12152 (MO).

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